

REMARKS

Claims 1-22, as amended, remain herein.

Minor edits for clarity have been made to claims 1-22.

Claim 1 has been amended to delete the "electrical power distribution line" limitation, which appears in claim 19.

Claims 2 and 7 have been amended for clarity to recite "first detection means for detecting a main fault indicated by a signal representative of a first main fault current threshold being exceeded by a current value." See Figs. 2 and 3 showing elements 18 and 26 for comparison with a signal representative of the high current and provided by sensors 10 and 14.

1. The Abstract has been amended.

2. Claim 7 was rejected under 35 U.S.C. §112, second paragraph. The Office Action states an incorrect interpretation of the wording of claim 7, i.e., that "the secondary breaking device opens when a second secondary fault threshold is exceeded, while the current is still below the preset opening threshold," thereby allegedly describing conflicting conditions

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for opening the secondary breaking device. Actually, the preset opening threshold (S2,S4 in Figs. 4A-4C) is totally independent of the secondary fault threshold (S3,S6 in Figs. 4A-4C). In fact, the preset opening threshold (S2,S4) concerns protection of the electrical contacts of the secondary braking device (relay 22 in Fig. 3), and the secondary fault threshold concerns current protection of a load. It is possible, sometimes, when the secondary fault threshold is very low, that the preset opening threshold is higher than the secondary fault threshold. In such a case, both conditions are satisfied. However, in most cases the secondary fault threshold is higher than the preset opening threshold, as shown in Fig. 4A. Therefore, both conditions are not simultaneously satisfied. In the majority of cases, the secondary fault has been detected before the time when the current has become lower than the preset current threshold (S2).

Figs. 4A-4C illustrate operating curves with a current signal (I_s) and thresholds (S2 and S3), as recited in claim 7.

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At time t_1 , the current (I_s) becomes higher than the secondary threshold (S_3), and then, at time t_4 , after time t_1 , the current becomes lower than the preset opening threshold. Since the secondary fault threshold (S_3) is higher than the preset opening threshold (S_2), the current (I_s) becomes lower than the secondary fault threshold (S_3) before time t_4 . When a secondary fault threshold is exceeded, storage circuit 27 is for saving a detection of a secondary fault current. Thus, it is not necessary that both conditions be simultaneously satisfied.

Reconsideration and withdrawal of the rejection are respectfully requested.

3. Claim 8 was rejected under 35 U.S.C. §112, second paragraph. Claim 8 has been amended to remove the word "polar." Reconsideration and withdrawal of the rejection are respectfully requested.

4. Claims 1-3, 6, 10-12, 19 and 20 were rejected under 35 U.S.C. §102(b) over Baumann et al. U.S. Patent 3,970,898.

The presently claimed electrical distribution device comprises a main part comprising main breaking means connected to an input connection for connection to an incoming electrical line, at least one secondary part separated from the main part and comprising at least one secondary breaking device and secondary control means for commanding opening and closing of at least one secondary breaking device, the secondary control means for enabling opening of at least one secondary breaking device if a current flowing in said breaking device is lower than a preset opening current threshold. This arrangement and corresponding method are nowhere disclosed or suggested in the cited reference.

The Office Action cites Baumann '898 as allegedly disclosing all of the elements of applicant's claims 1 and 20, and states that, in the Baumann '898 arrangement, the "disappearance of current I_2' causes the associated switch to move to the off position." Actually, this is not true, because

signal I'_2 corresponds to an output signal of the monitoring means 32. Baumann '898, column 5, lines 25-31, describes:

[t]he monitoring means 31, 32 and 33 are designed in such a way that they emit signals I_1' , I_2' and I_3' at their outputs 37,38 and 39 whenever the current I in the power line 10 exceeds a predetermined value at the first, second or third switch 8, 14 or 19, or when a short-circuit current occurs as a result of a short circuit at any point along the power line 10'.

This teaches that the signal I_2' is a binary signal emitted when current I exceeds a predetermined value. Thus, I_2' is not a signal representative of a current but instead, is a signal representative of the fact that a current exceeds a value.

Moreover, with respect to the limitation in claims 1 and 20, "the secondary control means for enabling opening of at least one secondary breaking device if a current flowing in said breaking device is lower than a preset opening current threshold," the Office Action states that in Baumann '898, "the threshold is inherently set in an input of AND gate (element 277 in Fig. 5), as its logic 1_{high} level." Actually (referring to element 223 and not element 277), logic signal I'_2 is not applied directly to the inputs of the AND gate because there are an inverter 221 or a timing element 221 and delay element 225

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between input 44 and the AND gate. Baumann '898, column 14, line 55-column 15, line 18, cited in the Office Action, describes structure not pertinent to applicant's claims.

Baumann '898, column 15, lines 31-33, describes signal I_2' causes the associated switch to move to the off position. Undoubtedly, the off position means an open position of the switch. Therefore, when current I exceeds a value or a threshold, monitoring means 33 and switch-operating means 23 cause the open position of the switch. Nowhere, does Baumann '898 disclose or teach secondary control means enabling the opening of a secondary breaker device if a current a current flowing in the breaking device is lower than a preset opening current threshold, as recited in applicant's claims 1 and 20.

The Office Action suggests that, under 35 U.S.C. §112, paragraph six, structure and steps equivalent to that recited in applicant's claims allegedly can be found in Baumann '898. As described above herein, the isolation apparatus described in Baumann '898 does not perform an identical function specified in applicant's claims in substantially the same way, and does not produce substantially the same result as the corresponding

element in applicant's specification. In specific detail, applicant has shown that the claimed elements are not interchangeable with or equivalent to the elements described in Baumann '898, and therefore the elements of applicant's claims are substantially different from the description in Baumann '898.

Claim 2 is directed to the opening of the main breaker during a preset first time (T2 in applicant's Fig. 4). The Office Action cites Baumann '898, Fig. 4, allegedly disclosing drop-out relay 204, stating that, allegedly, since activation of drop-out relay 204 is possible only when the current to the relay is provided for some predetermined time (a relay activation delay time), opening during a preset time is an inherent action of such a relay. Applicant disagrees with the suggestion that drop-out relay 204 corresponds to applicant's opening of the main breaker during a preset first time, because it is clear that an opening during a preset time is not understood by a person skilled in the art to be an implicit delay inherent to activation of a relay, as suggested by the Office Action. Generic relays, while having an inherent activation time, do not

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have a "preset" time, and Baumann '898 does not disclose a device for establishing a preset time.

Similarly, in claim 3, the preset delay determined for electrical protection does not correspond to an implicit delay of a relay.

Regarding claim 6, the Office Action cites Baumann '898, Fig. 4, allegedly disclosing "power" semiconductors 203, 205, 213 and 215 as the breaking means in power system lines. Baumann '898 does not disclose such transistors as being "power" transistors, and there is no basis found in Baumann '898 for suggesting that the generally described transistors 203, 205, 213 and 215 operating a relay correspond to applicant's power semiconductors operating as breaking means in power system lines, as recited in applicant's claim. The transistor-relay arrangement does not have the same function as power semiconductors operating directly on the power lines.

For the foregoing reasons, Baumann '898 fails to disclose all elements of applicant's claimed invention, and therefore is not a proper basis for rejection under §102. And, there is no disclosure or teaching in Baumann '898 that would have suggested

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the desirability of modifying any portions thereof effectively to anticipate or suggest applicant's presently claimed invention. Claims 2, 3, 6, 10-12 and 19, which depend from claim 1, are allowable for the same reasons described herein for claim 1, and claim 20 is allowable for the same reasons described herein for claim 1. Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

5. Claims 4, 5, 7, 8, 13-16, 21 and 22 were rejected under 35 U.S.C. §103(a) over Baumann '898 and Zulaski U.S. Patent 5,303,112.

Baumann '898 does not disclose all of the elements of claims 1, 20 and 22, as described herein, and therefore, claims 4, 5, 7, 8, 13-16, which depend from claim 1, also are allowable for the same reasons described herein for claim 1, and claim 21, which depends from claim 20, is allowable for the same reasons as claim 20. As discussed herein, Baumann '898 does not disclose applicant's elements relating to "threshold," namely, "the secondary control means for enabling opening of at least one secondary breaking device if a current flowing in said

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breaking device is lower than a preset opening current threshold," recited in applicant's claims.

The Office Action cites Zulaski '112 as allegedly teaching primary and secondary fault detection, but Zulaski '112 does not provide the deficiencies of Baumann '898 described herein.

Moreover, Zulaski '112 teaches a fault detection method comprising a sequence for detecting a fault location in a network, and does not teach use of a priority signal for opening the main breaking means. Zulaski '112 uses the word "priority" to compare status of the switches. In contrast, applicant's claims 15, 21 and 22 recite the word "priority" to identify a particular signal different from a regular communication signal, i.e., claim 15 recites:

a priority signal with second characteristics different from first characteristics of an information communication signal on a communication line to command opening of the main breaking means

Thus, Zulaski '112 does not teach opening and closing of the main breaking means according to the presence of a priority signal, as recited in applicant's claims 15, 21 and 22.

For the foregoing reasons, neither Baumann '898 nor Zulaski '112 contains any teaching, suggestion, reason, motivation or incentive that would have led one of ordinary skill in the art to applicant's claimed invention. Nor is there any disclosure or teaching in either of these references that would have suggested the desirability of combining any portions thereof effectively to anticipate or suggest applicant's presently claimed invention. Claims 4, 5, 7, 8, 13-16, which depend from claim 1, are allowable for the same reasons described herein for claim 1, and claim 21, which depends from claim 20, is allowable for the same reasons as claim 20. Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

6. Claim 9 was rejected under 35 U.S.C. §103(a) over Baumann '898, Zulaski '112 and Farrington U.S. Patent 4,996,646.

The Office Action admits that neither Baumann '898 nor Zulaski '112 discloses the second detection means for detecting a ground fault current flowing in at least two conductors of the breaking device, and cites Farrington '646 for teaching same. However, Farrington '646 does not provide the deficiencies of

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Baumann '898 described herein, and in particular, applicant's elements relating to "threshold" recited in claim 1.

For the foregoing reasons, none of Baumann '898, Zulaski '112 or Farrington '646 contains any teaching, suggestion, reason, motivation or incentive that would have led one of ordinary skill in the art to applicant's claimed invention. Nor is there any disclosure or teaching in any of these references that would have suggested the desirability of combining any portions thereof effectively to anticipate or suggest applicant's presently claimed invention. Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

7. Claim 17 was rejected under 35 U.S.C. §103(a) over Baumann '898 and Cordray et al. U.S. Patent 6,577,963.

Claim 17 is directed to a secondary part located in a building automation communication module, wherein the secondary control means comprises an electrical protection function and communication and automatic control functions for commanding the secondary breaking devices. The Office Action admits that

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Baumann '898 does not disclose such functions, and cites Cordray '963 as allegedly teaching a system for avoiding manually resetting a circuit breaker. However, Cordray '963 does not provide the deficiencies of Baumann '898 discussed herein, and in particular, applicant's elements relating to "threshold" recited in claim 1.

For the foregoing reasons, neither Baumann '898 nor Cordray '963 contains any teaching, suggestion, reason, motivation or incentive that would have led one of ordinary skill in the art to applicant's claimed invention. Nor is there any disclosure or teaching in either of these references that would have suggested the desirability of combining any portions thereof effectively to anticipate or suggest applicant's presently claimed invention. Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

All claims 1-22 are now proper in form and patentably distinguished over all grounds of rejection cited in the Office Action. Accordingly, allowance of all claims 1-22 is respectfully requested.

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Should the Examiner deem that any further action by the applicant would be desirable to place this application in even better condition for issue, the Examiner is requested to telephone applicant's undersigned representatives.

Respectfully submitted,

PARKHURST & WENDEL, L.L.P.



Roger W. Parkhurst
Registration No. 25,177
Robert N. Wieland
Registration No. 40,225

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PARKHURST & WENDEL, L.L.P.
1421 Prince Street, Suite 210
Alexandria, Virginia 22314-2805
Telephone: (703) 739-0220